

Optical and Radar Forest Mapping on Sulawesi Region

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Abstract: *Sulawesi* is one of the big Islands in Indonesia. Forest cover in *Sulawesi* Island will be feared to be degraded with the massive development in MP3EI corridor *Sulawesi*. Geospatial Information Agency is one the government institution which has responsibility to give Geospatial Thematic Information. Even, there are some institutions doing the similar thing but BIG is holding the responsibility of one map policy.

Optical imagery is the most common satellite data used for the Forest Mapping. Several users and vendors has mastered the mapping methodology and improved itself for recent years. Indeed the technology is still in improving process to achieve the better and accurate results. The goal is to overcome the obstacle like complex land cover and cloud cover most part of Indonesia. Many vendors have introduced many type of optical satellite with various benefits, better spatial resolution or spectral resolution.

And, there is radar imagery. Radar Imagery also has been improved in recent years, whether they are airborne radars or satellite radars. One of the common uses of radar image is to map the topography. Others use radar image to detect the land cover for to overcome the burden of optical imagery (cloud cover). One of radar image used to map the land cover is ALOS PALSAR. It is one of the good resolution imagery of radar that has various polarizations.

The first step of Biomass estimation is to map the forest cover. Optical Imagery may look better on display rather than radar image, but radar has also its own unique characteristic to detect the tree stand which is counted as forest. Although is still under research by some government, but they both have different and unique methodology and technology. Thematic Mapping and Integration Center has opportunity to collaborate with international association such as of INCAS Program (CSIRO, Australia) and K&C Initiative Program (JAXA, Japan). The contribution of BIG is to improve the methodology and accuracy on thematic mapping.

Keyword: Forest Mapping, Optical Imagery, Radar Imagery, Land Cover, Thematic Mapping